

REMARKS

The Office action of October 16, 2006, has been carefully considered.

Claims 14-17, 18 and 19 have been rejected under 35 USC 112, second paragraph, as indefinite.

Regarding Claim 14, the question is posed as how an element with a neutral axis defines a line. According to Claim 14, however, the element with a neutral axis does not define the line, but rather a step is recited of defining at least one line spaced apart from the defined neutral axis and parallel to the neutral axis. Claim 14 has been amended to recite that the line is spaced apart from the neutral axis by a predetermined distance.

The same remarks apply to withdrawn Claims 22, 24 and 26. In addition, Claims 22, 24 and 26 have been amended to correct the antecedent basis problem with these claims.

Regarding Claim 15, this claim has been amended to recite that the line is "defined by" a channel that runs along the line of the elongated flexible element.

Withdrawal of this rejection is requested.

Claims 14, 15, 18 and 19 have been rejected under 35 USC 102(b) as anticipated by Slocum.

Slocum discloses a mechanism for determining position and orientation in space, but does not disclose or suggest means for maintaining a fixed distance from the neutral axis and cannot therefore provide a linear response to the measurement.

Withdrawal of this rejection is accordingly requested.

Claims 14, 18 and 19 have been rejected under 35 USC 102(b) as anticipated by Danisch.

Danisch discloses a fiber optic bending and positioning sensor, but is directed to an optical system which measures loss in light detection to produce an indication of curvature

displacement. Such a system is clearly distinguished from the claimed invention, and withdrawal of this rejection is requested.

Claims 14, 18 and 19 have been rejected under 35 USC 102(b) as anticipated by Hodac.

Hodac discloses a differential bending detector in which a length variation is measured between axis 23 of an elongated element 22 and the axis of a length 3. Hodac does not, however, disclose the concept of a neutral axis and does not measure the variation in the length of a line defined between first and second objects and parallel to this neutral axis.

Withdrawal of this rejection is requested.

Claims 14, 15, 18 and 19 have been rejected under 35 USC 102(b) as anticipated by Challis.

Challis measures angular displacement utilizing a tightly wound coil spring conduit which shortens on the outside of the bend without substantially shortening on the inside of the bend. A wire is disposed within the conduit which extends from one end to the other and movement of the wire is measured to determine angular displacement. When bending, the neutral axis is not at the same distance from the fiber, and in addition, it is not possible to distinguish between a positive and a negative rotation, as it is according to the invention.

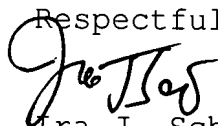
Withdrawal of this rejection is requested.

Claims 16 and 17 have been rejected under 35 USC 103(a) as obvious over Challis and Applicants submit that these claims are patentable for the reasons discussed above with regard to Claims 14, 15, 18 and 19. Withdrawal of this rejection is requested.

The rejection of Claims 1 to 6 under 35 USC 102(b) as anticipated by Hindes appears in the Office action, but has apparently been withdrawn.

In view of the foregoing amendments and remarks,
Applicants submit that the present application is now in
condition for allowance. An early allowance of the
application with amended claims is earnestly solicited.

Respectfully submitted,



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